Pro Tools® Avid® Unity MediaNetwork® Guide

Version 9.0

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Documentation Feedback

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chapter 1

Introduction

This guide explains how to configure a Pro Tools®|HD or Pro Tools|HD Native system as a Unity MediaNetwork *client* within an Avid MediaNetwork system, as well how to exchange audio and video media sequences between Pro Tools and Avid application clients attached to a MediaNetwork system.

This guide is written for Unity administrators, Pro Tools users, and Avid users.

Avid MediaNetwork Capabilities

Avid Unity MediaNetwork is a Fibre Channel shared storage system that lets users of Avid editing applications and Pro Tools share the same media, as follows:

- Stream audio and video media in real time (Windows only; Mac clients work in push-pull mode)

  ⚠ *Windows XP is not supported with Pro Tools 9.0 and higher. For information on using Windows XP with earlier versions of Pro Tools software, please see an earlier version of this guide, available at www.avid.com/support.*

- Configure up to nine users on the same MediaNetwork system
- Share AAF, OMF, and MXF audio and video sequences and media
- Share AAF, OMF, and MXF sequences using the Avid Interplay asset management system (Avid Interplay system required)

Avid Interplay

Avid Interplay with the Pro Tools Avid Interplay option lets Pro Tools and Avid users work within the same asset management system.

Refer to the *Pro Tools Avid Interplay Guide* for detailed information.

Overview of a MediaNetwork System

This guide describes how to configure and work with a Pro Tools client within an Avid MediaNetwork system. The MediaNetwork installations addressed in this guide typically comprise the following components:

MediaNetwork System Entire set of components within an individual MediaNetwork installation.

MEDIASwitch One or more central routers directing communication between different components within a MediaNetwork system.

PortServer or PortServer Pro (Optional) One or more servers that let Avid workstations access MediaNetwork workspaces through an Ethernet connection (without a Fibre Channel connection).

Avid Unity Transfer Engine (Optional) Server that lets Avid editing applications package elements of an Avid sequence and transfer them to other locations.

File Manager One or more servers (including a backup server) that functions as the heart of the Unity MediaNetwork file system by maintaining location information for media stored on drives.

JBOD/IBOD Chassis that contains the drives that store the actual data.

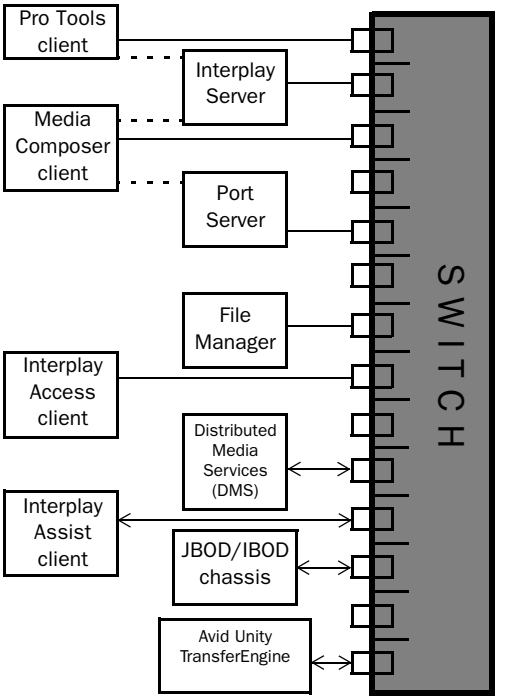
Avid Interplay Transcode and/or Avid DMS ProEncode (Optional) Engine that distributes processor-intensive tasks to network servers in order to allow MediaNetwork clients (such as Avid and Pro Tools workstations) to proceed without interruption.

Avid Interplay Access or Avid Unity MediaManager (Optional) Media asset management client application that enables facility-wide searching, sorting, cataloging, management, and retrieval of media.

Avid Interplay Assist or Avid Unity MediaManager Select (Optional) Client that allows real-time logging and annotating of any media right at the desktop.

Avid Interplay Engine or Avid Unity MediaManager Server (Optional) Server that manages the metadata stored on the File Manager server.

Clients One or more Avid or Pro Tools workstations configured to be able to exchange data with other clients attached to the MediaNetwork system.



Avid Unity MediaNetwork system (solid lines represent physical connections, while dotted lines represent connections through the switch)

AAF, OMF, and MXF Basics

AAF and OMF files are mechanisms for storing and retrieving media data and metadata so that projects can be freely exchanged between different applications and platforms (such as between Pro Tools and Avid video editing applications).

Media data and metadata enable an application that receives AAF and OMF sequence files to automatically and quickly reassemble the composition. A simple metaphor for this approach is that media data files are the pieces of a puzzle and metadata is the set of instructions for assembling the puzzle.

In the simplest case, only an AAF or OMF sequence is exchanged. If this sequence points to existing media files, the size of the sequence file is relatively small and the export/import process is relatively fast.

AAF and OMF sequences can also have media data embedded in them. This creates a single, larger file that is slower to export and import, but which may be easier to manage than thousands of files stored on different volumes.

Pro Tools supports AAF and OMF sequences that contain embedded audio media.

Pro Tools does not support AAF or OMF sequences containing embedded video media, except if you are importing such sequences into a video satellite track. In such cases, video metadata is imported into the track.

MXF

MXF is a media file format. There are MXF video files and MXF audio files, but there are no "MXF sequences." An AAF sequence may refer to or include MXF media files, but OMF sequences cannot refer to or include MXF files.

Avid Support for MXF Media

Avid editing applications support MXF media as follows:

- Creation of MXF media when capturing, transcoding, rendering, or using other methods to create media
- Import of MXF media files created in other Avid applications
- Export of MXF audio and video files

Pro Tools Support for MXF Media

Pro Tools supports MXF media as follows:

- Import of MXF video and audio media
- Export of MXF audio media

Pro Tools cannot export video files of any type.

Video files digitized in Pro Tools are technically of the MXF format, but are intended only for use in Pro Tools and are not tested for compatibility with other applications.

AAF

AAF sequences are the best way to exchange projects and maintain valuable metadata. An AAF sequence can refer to OMF and/or MXF media files, or have OMF and MXF media files embedded within them. There is no such thing as an AAF audio or video media file.

Avid Application Support for AAF Sequences

Avid editing applications support AAF sequences as follows:

- Import and export of AAF sequences with embedded video files (MXF or OMF) and/or audio files (MXF, WAV, or AIFF)
- Import and export of AAF sequences that refer to external (linked) video files (MXF or OMF) and/or audio files (MXF, WAV, or AIFF)

Pro Tools Support for AAF Sequences

Pro Tools supports AAF sequences as follows:

- Import and export of AAF sequences that contain embedded or refer to external (linked) MXF, WAV, or AIFF audio files
- Import of AAF sequences that refer to external (linked) MXF or OMF video files
- Video satellite systems only: Import of AAF sequences containing embedded video to a satellite track, in which case Pro Tools imports only the metadata (cuts and clip names) and not the video

Pro Tools does not export video files, tracks or metadata as part of AAF sequences.

OMF

OMF is both a media file and sequence format. OMF media files can be audio or video.

Avid Application Support for OMF Media and Sequences

Avid editing applications support OMF media and sequences as follows:

- Import and export of OMF sequences with embedded OMF video files and WAV or AIFF audio files
- Import and export of OMF sequences that refer to external (linked) OMF video files and WAV or AIFF audio files

Pro Tools Support for OMF Media and Sequences

Pro Tools supports OMF media and sequences as follows:

- Import of OMF video files created by Media Composer or other Avid applications
- Export of OMF audio files
- Import and playback of OMF sequences that refer to external (linked) audio files or contain embedded audio files
- Import and playback of OMF sequences that refer to external (linked) OMF video files
- Export of OMF sequences that refer to external (linked) audio files or contain embedded audio files
- Video satellite systems only: Import of OMF sequences containing embedded video to a satellite track, in which case Pro Tools imports only the metadata (cuts and clip names) and not the video

Pro Tools does not export video files, tracks or metadata as part of OMF sequences.

Embedded Media

Exporting to OMF or AAF with embedded media results in one large OMF or AAF file containing both the metadata and all associated media files.

Media Data (Media Files)

Media data represents raw audio or video material and is stored in individual media files. Every time you record a piece of video or audio material into an application, you are creating a media file containing media data. Audio media data is stored as samples (such as 44,100 or 48,000 samples per second of recording) while video media is typically stored as frames (24, 25, or 30 frames per second of recording).

The size of each media file depends on how much audio or video material it contains. For example, if you record ten minutes of continuous video material at a high resolution, you might end up with a video media file that is 1.8 GB in size, whereas a one minute recording at the same resolution might result in a 180 MB file. Media files tend to be large, since high quality audio and video signals are data intensive. Video data generally requires considerably more storage than audio data.

MXF Media Data Locations On the volumes you have designated for media storage, Avid editing applications store all MXF media:

- When stored locally, MXF media is placed in the *Avid MediaFiles/MXF/1* folder. The Avid editing application can also read MXF media located at *Avid MediaFiles/MXF/2*, *Avid MediaFiles/MXF/3*, and so on.
- When stored in a shared environment, MXF media is placed in a folder called *Avid MediaFiles/MXF/client.1* (where *client* represents the name of the client computer).

This guide refers to the root folder name (*Avid MediaFiles*) whenever referencing this folder.

OMF Media Data Locations On the volumes you have designated, Avid editing applications store all OMF media in the *OMFI MediaFiles* folder.

Metadata

Metadata is used to describe:

- Information about each media file. This may include sample rate, bit depth, region names, the name of the videotape from which the media file was captured, and even time code values that specify where a file was used in a Pro Tools session.
- Information about Pro Tools sessions or other sequences, including what files are used, where they appear in a Timeline, and automation.
- For AAF or OMF sequences, metadata also includes information about unrendered AudioSuite effects (such as real-time EQ) on Avid workstations. Pro Tools skips unrendered effects on import. Rendered effects are media files, that can be imported or skipped on import into Pro Tools.
- For AAF or OMF sequences, information about automation (clip-based gain or keyframe gain).

Embedded Media and Linked Media

There are two ways to handle media files when exporting AAF or OMF files:

- Embedded media (in which the media files are embedded in an AAF or OMF sequence)
- Linked media (in which media files are referenced by an AAF or OMF sequence)

Pro Tools lets you import AAF or OMF sequences containing embedded audio files. You can also import AAF or OMF sequences containing embedded video files, but only if you are importing them to a video satellite track. In such a case, only the video metadata is imported.

Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing

Avid applications edit with frame accuracy. This means that in a 30-fps project, you can edit at 30 different locations for every one second of video. Pro Tools edits with sample rate accuracy. In a 48-kHz session, there are potentially 48000 locations to edit for every second of audio.

When Pro Tools exports an AAF or OMF composition destined for an Avid application, it must ensure that the audio files line up on frame boundaries. To do this, it might have to split an existing audio region into three separate regions. For example, the following illustration shows a 5-frame video clip and a corresponding audio region. In Pro Tools, the audio regions might not line up on video frame boundaries.

In order to export frame accurate audio regions, Pro Tools splits the audio media on frame boundaries and fills any gaps with silence. The following illustration shows the resulting audio regions that are exported to Avid.

When you use Export Selected Tracks as OMF/AFF to export tracks from Pro Tools with Enforce Avid Compatibility enabled, a number of additional media files labeled Sample Accurate Edit appear in the Avid bins. These are the additional media files that Pro Tools creates to ensure that the Avid editing application receives frame-accurate audio. You also see the sample-accurate edit media files if you zoom in on the imported audio in the Timeline.

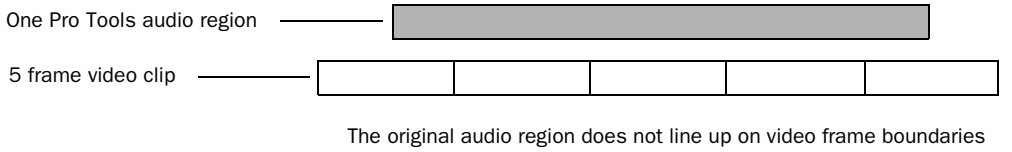


Figure 1. Original audio region

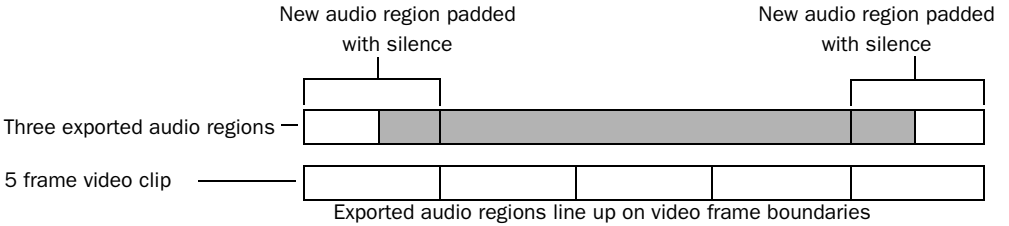

New audio region padded with silence
New audio region padded with silence
Three exported audio regions
5 frame video clip
Exported audio regions line up on video frame boundaries

Figure 2. Exported audio region

System Requirements and Compatibility

Using Pro Tools within a Unity MediaNetwork system requires the following;

- A qualified Mac computer running Mac OS X or PC running Windows 7
- Pro Tools 9.0 with HD or HD Native hardware
- An available expansion slot for a Fibre Channel host bus adapter (HBA), and Fibre Channel connectivity to the Avid Unity MediaNetwork server
- MediaNetwork client installation software

Avid can only assure compatibility and provide support for hardware and software it has tested and approved.

For complete system requirements and a list of qualified computers, operating systems, hard drives, and third-party devices, visit:

www.avid.com/compatibility

About Avid Unity MediaNetwork Guides

PDF versions of Avid Read Mes are installed automatically with Avid Unity MediaNetwork software. Also, searchable online help files containing the same information are accessible from the Help menus in the Interplay Access and Interplay Administrator applications.

You can use any of the following guides as supplementary information for this guide.

- *Avid Unity MediaNetwork Site Preparation Guide* contains information that helps you prepare your site for installing MediaNetwork system hardware.
- *Avid Unity MediaNetwork Management Guide* provides information for the setup and day-to-day management of an Avid Unity MediaNetwork system and system.
- *Avid Unity MediaNetwork Windows Fibre Channel Client Setup Guide* provides information for setting up MediaNetwork client hardware, installing and configuring MediaNetwork client software, and creating a network of MediaNetwork clients and other systems.

These guides and other Interplay guides are available on the Avid Interplay Online Library DVD and on the Avid Knowledge Base (www.avid.com/onlinesupport). To view or print PDF guides, use Adobe Acrobat Reader.

Related Information

The following documents located on the Documentation disc provide more information about configuring and managing your work environment:

- *Avid Unity MediaNetwork File Manager Setup Guide*
- *Avid Unity MediaNetwork Release Notes*
- *Avid Unity MediaNetwork Upgrade Notes*
- *Avid Unity MediaNetwork System Overview*
- *MediaNetwork Windows Fibre Channel Client Quick Start Card*
- *Avid Unity MediaNetwork Windows Ethernet Client Setup Guide*
- *MediaNetwork Windows Ethernet Client Quick Start Card*
- *Avid Unity MediaNetwork Port Server Setup Guide*
- *Avid Unity MediaNetwork 4.0 Supported Configurations*
- *Avid Unity MediaNetwork File Manager Failover Installation Notes*
- *Avid Unity LANserver EX Setup Guide*
- *Avid Unity LANserver Upgrade Notes*
- *Avid Unity LANserver Release Notes*

About the Pro Tools Avid Interplay Guide

The *Pro Tools Avid Interplay Guide* describes how to set up Pro Tools as a client within an Avid Interplay system, as well as use Pro Tools and Interplay to exchange sequences between Avid and Pro Tools users.

Support for Avid Unity MediaNetwork

For support on Avid Unity MediaNetwork, visit Avid's online Knowledge Base (www.avid.com/onlinesupport). Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

For support on Pro Tools HD, see "About www.avid.com" on page 10.

Conventions Used in This Guide

Pro Tools guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save	Choose Save from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click	Click with the right mouse button

The names of Commands, Options, and Settings that appear on-screen are in a different font.

The following symbols are used to highlight important information:

User Tips are helpful hints for getting the most from your system.

Important Notices include information that could affect your data or the performance of your system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide and other Avid guides.

About www.avid.com

The Avid website (www.avid.com) is your best online source for information to help you get the most out of your Pro Tools system. The following are just a few of the services and features available.

Product Registration Register your purchase online.

Support and Downloads Contact Avid Customer Success (technical support); download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Knowledge Base or join the worldwide Pro Tools community on the User Conference.

Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Pro Tools training center.

Products and Developers Learn about Avid products; download demo software or learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Avid or sign up for a Pro Tools demo.

chapter 2

Configuring a Workstation as a MediaNetwork Client

This chapter is for Unity administrators and describes how to install and configure individual Pro Tools workstations as clients of an Avid Unity MediaNetwork system.

Installation Overview

Installing the hardware and software involves the following process:

1 Make sure that Pro Tools software is installed on the workstation.

2 Install the MediaNetwork client hardware.

3 Install the MediaNetwork client software.

When you update the client software, ensure that you update the Fibre Channel HBA drivers and firmware to the versions supported with your current version of MediaNetwork.

Installing Pro Tools

If you plan to configure a Pro Tools workstation as a MediaNetwork client, ensure that Pro Tools hardware and software are properly installed. For detailed information, see the *Pro Tools Installation Guide*.

Installing MediaNetwork Client Hardware

The Avid Unity MediaNetwork client hardware consists of:

- One optical SFP (for the Server switch)
- One of the following qualified Fibre Channel HBA (Host Bus Adapter) cards:
  - ATTO FC 3300 2 GB HBA
  - ATTO Celerity FC-41XS 4 GB HBA
  - ATTO Celerity FC-41ES 4 GB HBA

You will need to purchase optical cables separately.

For a complete, current list of qualified host bus adapters please consult Avid support.

The cable needs LC optical cable connectors at both ends.

If a Fibre Channel HBA has ever been installed on your Windows system, you must remove any unused ATTO .INF files before installing the ATTO Fibre Channel HBA. If you do not know how to do this, please contact your Windows system administrator.

To install the Fibre Channel HBA in a client workstation:

1 Shut down and power off your computer and expansion chassis (if one is present).

2 Open your computer according to the instructions included with it.

3 Release any static electricity by touching the power supply, or another grounded item.

4 Remove the Fibre Channel HBA from the antistatic bag, being careful to handle it only by the edges.

5 Determine the correct PCI/PCIe card slot order (see Appendix A, "Slot Configurations for Avid Video Peripherals").

6 Line up the Fibre Channel HBA with the installation slot, and slide the card into place gently so the PCI/PCIe connector is aligned with the correct PCI/PCIe slot.

7 Press down firmly on the card with even pressure. The connector should click into place in the PCI/PCIe slot.

8 To attach the card bracket to the computer mounting bracket, fasten the card in place using a screw or latch down the securing bracket if one is built in.

To connect a Fibre Channel optical cable to the Fibre Channel HBA:

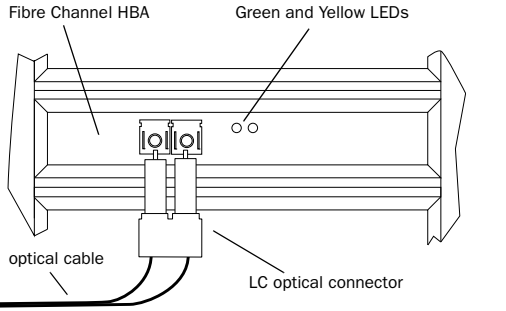
1 Locate the optical cable with the LC optical cable connector (dual plug) on the end.

2 Remove the protective covers from the following:

- LC optical connector on the optical cable
- Fibre Channel HBA in your computer

3 Plug the optical cable connector into the Fibre Channel HBA. The connector and the Fibre Channel HBA are keyed and only fit together one way. You should hear a click when the cable is properly seated.

⚠ *Do not try to force the LC optical cable connector into the Fibre Channel HBA connector. There should be no resistance as you make the connection. If you feel that the optical cable connector does not fit into the Fibre Channel HBA connector, turn the optical cable connector 180 degrees and try to insert the optical cable connector into the Fibre Channel HBA connector again.*



Connecting the optical cable to the Fibre Channel HBA

4 If the other end of the cable is not yet connected to the MEDIASwitch, do so now. For detailed instructions, see the *Avid Unity MediaNetwork Configuration Guide* and the *Avid Unity MediaNetwork Site Preparation Guide*.

Fibre Channel HBA LED States

The LEDs on the Fibre Channel HBA indicate whether or not the card is functioning correctly. See Table 1 for the 2 Gb Fibre Channel HBA or Table 2 for 4 GB Fibre Channel HBAs.

Table 1. ATTO FC 3300 2 Gb Fibre Channel HBA LED states

LED	LED State	Meaning	Required Action
Green	On	Normal—link up	No action required
Yellow	On	Link down	Check cable connection to MEDIASwitch and Fibre Channel HBA. If condition persists, contact Avid customer support.
Yellow	Flashing	Fault	Contact Avid customer support.
Green or Yellow	Off	Driver not loaded	Load driver. If condition persists, contact Avid customer support.

Table 2. ATTO Celerity FC-41ES and FC-41XS 4 Gb Fibre Channel HBA LED states

LED	LED State	Meaning
Link	Green	Indicates that a supported hardware driver is loaded for the ATTO Celerity card in its host system, and that another hardware device is detected at the other end of the connected fibre cable.
2 GB	Green	Indicates that the HBA is running in 2Gb mode.
4 GB	Amber or Green	Indicates that the HBA is running in 4Gb mode.

Installing MediaNetwork Client Software

The MediaNetwork client software lets the Mac or Windows Fibre Channel-equipped client log in to the MediaNetwork File Manager and to map accessible workspaces. The client software is supplied on the MediaNetwork Release CD-ROM in the Mac or Windows client kit.

⚠ *You must have a supported version of Mac OS or Windows 7 installed before you install the MediaNetwork client software.*

Installing MediaNetwork client software involves the following steps:

1 Install the Fibre Channel Controller driver.

2 Install the MediaNetwork client software.

Installing the Fibre Channel Controller Driver

After you install the Fibre Channel adapter board in the client, you need to install the latest Fibre Channel adapter software. The Avid Unity MediaNetwork DVD-ROM contains an ATTO™ driver specific for your board. See the *Avid Unity Media Engine and Avid MEDIArray XT ReadMe* for the instructions on loading the driver and firmware if needed.

Installing the MediaNetwork Client Software

To install the Fibre Channel client software (Macintosh):

1 Insert the MediaNetwork DVD-ROM into the OS X client DVD-ROM drive. The MN x.x DVD-ROM icon appears on the desktop, where x.x is the software version number.

2 Double-click the MN x.x DVD-ROM icon. The MN x.x window opens.

3 Double-click the Avid Unity Installer icon. A login dialog box opens.

4 Type a user name and password for a user account with administrator permissions. The Avid splash screen opens.

5 Click Continue.

6 Read the license agreement and click Accept. The Avid Unity Install window opens. If you click Decline, then the installation ends.

7 Select the Easy Install option to install all the necessary software on the Avid drive.

8 Click Install. A dialog box opens, stating that no other applications can be running while the installation is in progress.

9 Click Continue. All applications running on the workstation quit and a dialog box opens, asking which client software you want to install.

10 Do one of the following:

- If you are installing the MediaNetwork software on a Avid editing product, click MediaNetwork, and then click Install. The MediaNetwork software is installed in the Avid Unity folder on the Macintosh HD drive.
- If you are installing the MediaNetwork software on a Pro Tools Macintosh client, click MediaNetwork for Pro Tools, and then click Install. The MediaNetwork software is installed in the Avid Unity folder on the Macintosh HD drive.

11 Click OK. A dialog box opens, asking if you would like to Continue, Quit, or Restart the Mac OS X client.

12 Click Restart. The Mac OS X client reboots.

To install the MediaNetwork client software (Windows):

1 Insert the MediaNetwork DVD-ROM in the DVD-ROM drive. The DVD-ROM is set to start automatically and open the Avid Unity Installation window. If the DVD-ROM does not start automatically, start the installation manually as follows:

- Double-click the My Computer icon on the desktop. The My Computer window opens.
- Right-click the DVD-ROM icon, and select Play. The Avid Unity Installation window opens.

2 Click Product Installers.

3 Click MediaNetwork Components on the list of available products.

4 Click Install Fibre Attached Client on the list of MediaNetwork installers. The Question dialog box opens, listing the prerequisite software needed for installation.

- If all the software is installed, click Next and continue with step 5. The InstallShield Wizard dialog box opens.
- If some of the software is not installed, click Cancel to exit the installer. Install the prerequisite software, and go to step 1 to begin the MediaNetwork installation again.

5 Accept the default values presented by the InstallShield Wizard. The Setup Status screen appears, showing the installation progress indicator while the software is being installed. The InstallShield Wizard Complete opens.

6 Select "Yes, I want to restart my computer now," and then click Finish to complete the client software installation.

7 Reboot the client.

Setting the Date and Time

You need to correctly set the date, time, time zone, and daylight savings time on your computer to be able to use the Synchronize Time with Server function for your MediaNetwork client.

To set the date, time, and time zone on Mac OSX:

1 Select Apple > System Preferences. The System Preferences window opens.

2 Click the Date & Time icon. The Date & Time window opens.

3 Click the Date & Time tab. The date and time properties appear.

4 In the Today's Date section, click the arrows before and after month and year to change the month and year values.

5 Click the correct day of the month in the calendar.

6 In the Current Time section, click the hours, minutes, or seconds, and then click the up or down arrow to change the time values.

7 Click the Time Zone tab. The time zone map appears.

8 Click the map near your location to highlight the time zone.

9 Click the Network Time tab. The network time properties appear.

10 Close the Date & Time window.

11 Reboot the client.

To set the date, time and time zone on Windows 7:

1 Right-click the clock icon on the taskbar. A menu will appear.

2 Choose Adjust Date and Time from the menu. The Date and Time dialog box will appear.

3 Click the Adjust date and time... button.

4 Set the date and time to the correct values.

5 Press OK to close the window.

6 Click the Change Time Zone button and select the correct time zone.

7 Make sure that "Automatically adjust clock for daylight savings changes" is selected.

8 Click OK to save your changes, then close the Date and Time Control Panel.

chapter 3

Using a Client in a MediaNetwork System

This chapter describes how to use MediaNetwork client software to configure your Pro Tools workstation as a MediaNetwork client, as well as set up and work with Pro Tools in a MediaNetwork system.

Getting Started Using a Workstation as a MediaNetwork Client

To get started using your workstation as a MediaNetwork client, follow these steps:

1 Log into MediaNetwork: See "Logging into a MediaNetwork System" on page 17.

2 Assign the workspace drive letter: See "Assigning the Workspace Drive Letter" on page 18.

3 Mount a workspace on your Pro Tools client: See "Mounting and Unmounting Workspaces" on page 19.

Logging into a MediaNetwork System

After installing MediaNetwork hardware and client software to your workstation, you must log into the MediaNetwork system in order to configure and mount MediaNetwork drives.

MediaNetwork administrators should provide users of each Pro Tools client with an individual username and password. If you do not have a password, contact your administrator.

To log into the MediaNetwork system:

1 Do one of the following:

Macintosh: If the Connection Manager alias icon is not available, select Go > Applications, and then double-click the AvidUnity folder. In this folder, double-click the UnityConnectionManager file.

Windows: If the Connection Manager icon is not available in the Windows taskbar, select Start > All Programs > AvidUnity > Avid Unity Connection Manager.

2 Do one of the following:

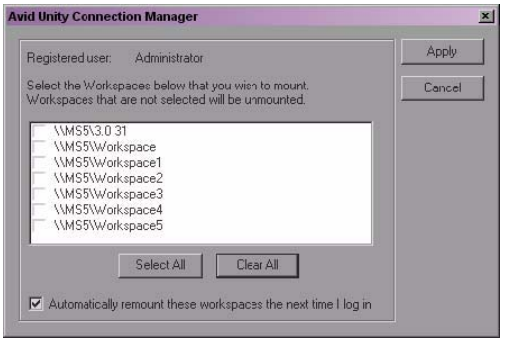
Macintosh: Double-click the Connection Manager alias icon on the desktop, or double-click the Connection Manager alias icon in the dock, and then select Connections > Manage Connections.

Windows: Click the Connection Manager icon in the Windows taskbar, and select Manage Connections.

3 If you are not logged in with a valid MediaNetwork user name and password, you are prompted to supply them before the Avid Unity Connection Manager dialog box opens.

In the Network Logon dialog box (Macintosh) or the Login dialog box (Windows), type a valid MediaNetwork user name, password, and Domain name (if necessary), and click OK.

The Avid Unity Connection Manager dialog box opens and displays a list of all the MediaNetwork workspaces to which you have access.



Avid Unity Connection Manager dialog

Assigning the Workspace Drive Letter

(Windows only)

MediaNetwork workspaces (drives) are automatically assigned a sequential series of alphabetical letters starting with the letter *f*. For example, a MediaNetwork system containing three workspaces would be assigned the drive letters *f*, *g*, and *h*, respectively.

If your MediaNetwork client contains any local drive that shares a letter (such as *f*) with a Unity workspace, you must re-map the Unity workspaces so that drive letters on the Pro Tools client do not overlap with drive letters on Unity workspaces.

To re-map workspace drive letters:

1 Click the MediaNetwork taskbar icon, and choose Configure from the pop-up menu.

2 In the Avid Ethernet Attached Client dialog, click Advanced. The Advanced Connection Manager Options dialog appears.

3 From the "Assign Workspace Drive Letters Starting With" pop-up menu, select the letter to which the first workspace will be assigned. (Make sure to select a letter whose range of sequential letters does not include any letters assigned to drives on your Pro Tools client.)

4 Select "Synchronize the System Clock with the Server Clock." This is necessary to help prevent time-related title creation and access problems by synchronizing the time of the MediaNetwork client to the time of MediaNetwork File Manager.

5 If you want to be notified when the status of a workspace connection is lost, select the relevant option.

6 Click OK to apply changes.

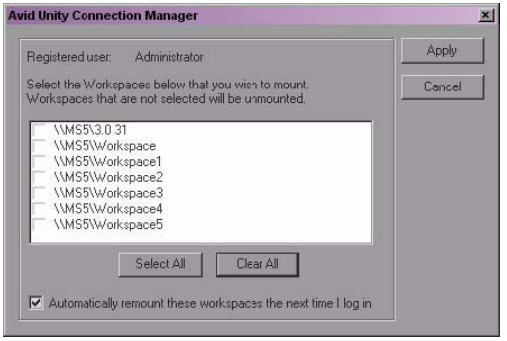
Mounting and Unmounting Workspaces

Mounting a workspace to your Pro Tools workstation is equivalent to connecting to a network drive or mounting a FireWire drive to your computer. Once the drive is mounted, you can connect to that workspace, stream media from it, save media to it, and unmount it.

To mount or unmount Unity workspaces using your Pro Tools client:

1 Open the Connection Manager.

2 In the Connection Manager window, select the Workspaces that you wish to mount or unmount.



Avid Unity Connection Manager dialog

3 If mounting a workspace, and you want the Pro Tools client to automatically mount these workspaces each time you log into the MediaNetwork system, select the option at the bottom of the dialog.

4 Click Apply.

Configuring the Pro Tools Playback Engine

Pro Tools|HD and Pro Tools|HD Native systems have multiple playback modes at different sample rates. For optimum performance in a MediaNetwork system, it is recommended that you use the least number of voices per DSP.

To configure the Playback Engine:

1 Launch Pro Tools.

2 Choose Setups > Playback Engine.

3 Select the lowest number of voices per DSP for the Playback Engine.

You can use the other Playback Engine settings if your session is on local storage.

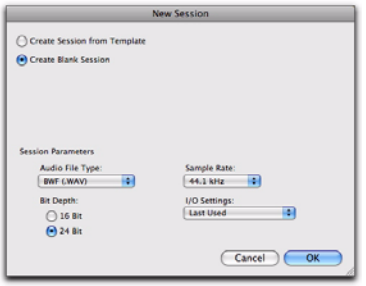
4 Click OK.

Configuring Pro Tools Session Settings for a New Session

The following describes the recommended session settings for creating a new Pro Tools session when working in a MediaNetwork system.

To create a new Pro Tools session for Avid Unity MediaNetwork:

1 In Pro Tools, choose File > New Session.



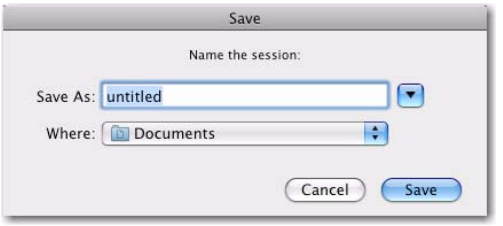
New Session dialog

2 In the New Session dialog, select an Audio File Type for the session that is compatible across all workstations.

3 Select a Sample Rate for the session that is compatible across all workstations.

4 Select a Bit Depth for the session that is compatible across all workstations.

5 Click OK.



Pro Tools Session Naming dialog

6 Name the session and save it to an Avid Unity MediaNetwork workspace.

Audio File Type

Pro Tools supports AIFF and BWF (.WAV) audio files natively.

⚠ *All Sound Designer II files must be converted to a Windows-compatible format.*

For the best media compatibility between Pro Tools workstations and Avid workstations, you should choose to work with Broadcast WAV media files. Make sure the Audio File Type pop-up menu in the New Session dialog box is set to WAV when you are creating a new session.

The WAV file format is required when working with audio files containing field recorder metadata.

Sample Rate

Pro Tools HD supports sample rates up to 192 kHz, but other Pro Tools and Avid workstations only support lower sample rates. Therefore, when working in mixed MediaNetwork systems, it is vital to use sample rates for shared media that are supported on all workstations.

It is preferable for all participants in the system to agree on a standard, universal sample rate for the sake of compatibility and to avoid media conversion. Many facilities choose 48 kHz, which is the industry standard for post production and broadcast applications.

Bit Depth

Some older Avid workstations support only 16-bit audio. Make sure you consider the following when you are starting a new audio session:

- For maximum compatibility when using a Pro Tools workstation to share audio files and sequences with older Avid workstations in a MediaNetwork system, set the bit depth to 16-bit in the New Session dialog box when you are creating new session files.
- When using a Pro Tools workstation to share audio files and sequences with either Pro Tools workstations or current Avid workstations in a MediaNetwork system, set the bit depth to either 16-bit or 24-bit (depending on your project requirements) in the New Session dialog box when you are creating new session files.

⚠ *For current compatibility information on supported Pro Tools systems and Avid Unity MediaNetwork, visit www.avid.com.*

Performance Guidelines

Maximum Number of Clients

At the time of this writing, the following configurations have been thoroughly tested by Avid, and are provided only as guidelines. Actual performance depends on specific configuration and program material. More configurations will be announced as they are tested. For the latest information of supported configurations, see the Avid Unity MediaNetwork compatibility pages on the Avid website (www.avid.com).

Pro Tools Only System

Pro Tools|HD
1000 ms Audio Edit Density
10 video and 10 audio Drives

Clients	Tracks	Sample Rate/ Bit Depth	Video
1	32	48 kHz/24-bit	1:1
3	48	48 kHz/24-bit	3:1
9	24	48 kHz/24-bit	3:1

Pro Tools|24 MIX (Pro Tools TDM 5.1.3)
10 video and 10 audio Drives
(30 audio drives are required for 9 clients)

Clients	Tracks	Sample Rate/ Bit Depth	Video
1	24	48 kHz/24-bit	1:1
3	48	48 kHz/24-bit	3:1
9	32	48 kHz/24-bit	3:1

Mixed Systems

Mixed System A

Type	Clients	Video
Media Composer	4	1:1 Dual-Stream
Pro Tools	1	1:1 Single-Stream

Mixed System B

Type	Clients	Video
Media Composer	4	1:1 Dual-Stream
Pro Tools	3	3:1 Single-Stream

Mixed System C

Type	Clients	Video
Media Composer	9	3:1 Single-Stream
Pro Tools	3	3:1 Single-Stream

Mixed System D

Type	Clients	Video
Media Composer	2	10:1 Dual-Stream
	6	3:1 Single-Stream
Pro Tools	3	3:1 Single-Stream

Drive Requirements

Table 3 on page 22 shows the number of dedicated drives required for the specified number of Pro Tools systems to play back 48 tracks of 48 kHz, 24-bit audio at the specified edit density. The 4-, 5-, and 9-client configurations are only supported with 2- and 4-Gb Fibre Channel switches and IBODs/JBODs. These numbers are approximate, performance will vary depending on configuration and program material.

Table 3. Allocation Group Sizes

Pro Tools Clients	Number of Drives at 1000 ms Edit Density:
1	4
2	6
3	8
4	28
5	28
9	30

Sharing Allocation Groups and Media

Audio and video files can be shared among several MediaNetwork clients. However, keep in mind the following restrictions when sharing Allocation Groups and files:

- Audio files for Pro Tools clients should be in a separate allocation group from the video files.
- Pro Tools clients cannot use files that are in a shared uncompressed allocation group.
- Each Avid video editing client that is using dual-stream 1:1 video must have dedicated access to the single-user allocation group containing the video files. No other clients can share the video files while these clients are using them.
- Only one Pro Tools client can access a finishing allocation group containing 1:1 video files. The allocation group may not be used simultaneously by a video editing client, and the Pro Tools client can only play a single stream of video.
- Up to three Pro Tools clients and one video editing client can access an allocation group containing 3:1 or lower compressed video files.
- In an environment with at least one Avid Media Composer client running two streams at 1:1 video resolution, the maximum number of clients that can normally be supported is seven.
- Each finishing video allocation group must connect directly to a MEDIASwitch port.

Performance Characteristics

You should experience no functional difference between working with Pro Tools attached to a MediaNetwork system or working with Pro Tools attached to local storage. However, due to the architectural differences between MediaNetwork and local storage, some subtle differences may be noticeable.

User Interface and Graphics

The Pro Tools workstation is tasked in a completely different manner when Pro Tools is recording or playing from MediaNetwork storage. For this reason, the update speed of the display and the responsiveness of the Pro Tools user interface might differ somewhat when compared to using local storage. When using MediaNetwork storage, the Pro Tools workstation might periodically be interrupted by sporadic bursts of communication with the File Manager. This can cause the display to not refresh smoothly. These periodic, brief interruptions in display updating are most prevalent during long recording sessions or while playing back large sessions. These interruptions do not necessarily indicate that a problem exists and do not affect audio playback. Except for these interruptions or when tasks are in progress, display and user interface performance should be comparable to using local storage.

For example:

- Counters, meters, scrolling, and other animated user interface elements are visually smooth in operation.
- Faders and panners move smoothly when automated.
- Mouse control of faders and panners is immediate and responsive. This includes TDM plug-ins. RTAS and AudioSuite plug-ins, because of their host-based implementation, might provide less-than-smooth operation under certain circumstances.
- Scrubbing and auditioning (in the Regions List and Import Audio dialog) is immediate when you press the mouse button.
- Editing during playback is smooth. Mouse control of editing tools is immediate and responsive.

Opening Files

Pro Tools periodically opens and closes files (for example, to buffer them for playback). When using MediaNetwork storage, the file open process is somewhat slower than with local storage. This is most noticeable when first opening an existing session. It can also result in sluggish Pro Tools performance with very large sessions.

Sharing Files

Sharing Session Files

To avoid machine conflicts among multiple users and avoid general performance problems, no two Pro Tools clients should open the same session at the same time. Only one Pro Tools client should have a particular session open at any given time.

Sharing Video Files

Pro Tools clients with Avid video peripherals (such as Avid Mojo, Avid Mojo SDI, and AVoption|V10) can share JFIF and MXF video files with other MediaNetwork clients. Pro Tools cannot destructively modify video files.

Sharing Audio Files

Pro Tools clients can share audio files in an allocation group with other MediaNetwork clients. When working with shared audio files, it is recommended that you use the Duplicate command to make a copies before applying any destructive edits.

Destructive Editing

The following Pro Tools features can destructively modify audio files:

- Pencil Tool
- "Destructive" AudioSuite
- Destructive Record
- Compact Selected
- DestructivePunch Record
- DigiBase metadata entry/editing

When working with shared audio files, it is recommended that you use the Duplicate command to substitute copies before applying any destructive edits. This avoids the problem of modifying a file referenced by another session.

To substitute a copy of a shared file:

1 In Pro Tools, select the region you want to copy in the Edit window.

2 Choose Edit > Duplicate.

MXF and OMF Files

Pro Tools treats all MXF and OMF media that are both created by Avid and stored on Unity shared storage as read-only. Consequently, destructive editing tools cannot be used to modify MXF and OMF media files. However, you can delete or overwrite MXF and OMF files.

Because Pro Tools creates both MXF/OMF and non-MXF/OMF media files, these destructive editing tools can be used on non-MXF/OMF media created by Pro Tools. When you are working in a MediaNetwork system, you should always create a copy of an audio file before applying a destructive change.

Use the Duplicate or Consolidate commands in Pro Tools to make non-OMF copies of audio files for destructive editing.

chapter 4

Avid Unity MediaNetwork Workflows for Pro Tools

This chapter covers workflows for using an Avid editing application (such as Media Composer) and Pro Tools to exchange AAF and OMF sequences using MediaNetwork shared storage, as follows:

- Exporting audio and video from Media Composer
- Importing audio and video into Pro Tools
- Exporting audio from Pro Tools for Avid editing applications
- Importing audio into an Avid application from Pro Tools
- Synchronizing audio with an Avid sequence

Exporting Audio and Video from Media Composer

To export sequences from Avid applications for import into Pro Tools, you can choose from the following methods:

- Using the Send To templates to export an AAF or OMF sequence
- Manually exporting an AAF or OMF sequence
- Exporting an AAF or OMF sequence directly to an Interplay server (Media Composer 2.6 or higher and Avid Interplay system required)
- Checking a sequence into Avid Interplay for Pro Tools (Media Composer 2.6 or higher and Avid Interplay system required)

Using the Send To Templates to Export an AAF or OMF Sequence from Media Composer

The Send To Templates option lets you create one AAF sequence that references audio and video files used in the sequence, and save it to the volume selected in your Avid Preferences.

To use the Send To Pro Tools templates:

1 Select a sequence in a bin.

2 Choose File > Send To > Pro Tools on Unity, then choose one of the following options:

Link to Audio and Video Creates an AAF sequence that links to existing audio and video wherever possible and only creates new media files for effects that have not been rendered. This is the fastest and most storage-efficient way to export a sequence.

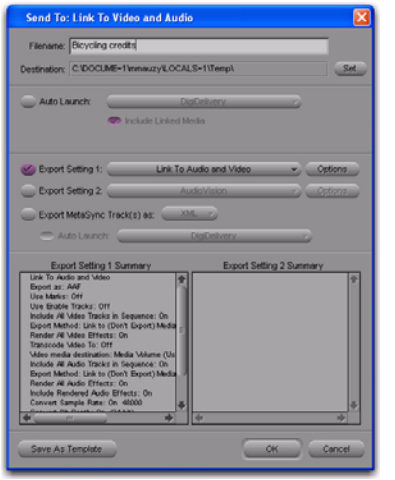
Choose this option for a scenario in which Pro Tools will link to the same media files as the current Avid sequence. Use this setting if the media files are currently stored on volumes that are suitable for Pro Tools media playback.

QuickTime–Link to Audio Creates an AAF sequence that links to existing audio, and creates a new QuickTime movie.

Choose this option when exporting a sequence for a Pro Tools system that does not have an Avid video peripheral attached.

VIdeo Mixdown–Link to Audio Creates an AAF sequence that links to existing audio and includes editing metadata as well as a video mixdown in the video format defined by Media Creation settings. When imported into Pro Tools, the video mixdown and metadata are displayed in two separate video tracks on the Timeline.

Choose this option for any scenario in which Pro Tools will link to the same media files as the current Avid sequence.



Send To dialog (LInk to Audio and Video options shown)

3 If you want to view or change export settings, click the Options button, and then make any changes. If you make any changes, you can use the Save As Template button to create a new template.

This workflow assumes that you use the default values. This means that you are exporting using the Project sample rate, audio file format, and sample bit depth.

4 Click Set.

5 Navigate to the location where you want the AAF or OMF files to reside.

6 Click OK.

The Avid application exports the files to the destination volume. If the Avid application has to transcode video files to a new resolution, render effects or perform audio file conversions, a new sequence appears in the bin with the name *filename*.Export.01, and a new master clip appears in the bin with the name *filename*.new.01.

Manually Exporting an AAF Sequence from Media Composer

Manually exporting an AAF sequence from an Avid editing application involves more steps than using the Send To templates, but it provides more flexibility.

⚠ *You will need to render all video effects before manually exporting the sequence.*

Once all effects have been rendered, export the sequence as an AAF sequence.

To manually export an AAF sequence:

1 Select the sequence in the bin.

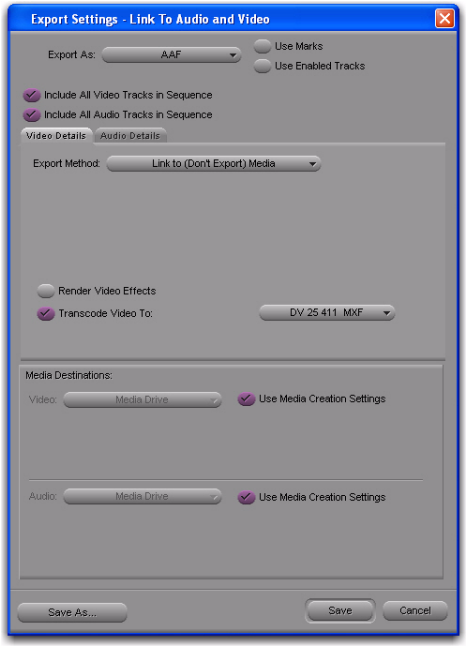
2 Select File > Export.

3 Type a name and select a location for the exported sequence.

4 Select Export to Pro Tools from the Export Settings menu at the bottom of the Export As dialog.

5 Click the Options button to open the Export to Pro Tools Settings dialog. Verify the settings:

- For Export As, select AAF.
- Select the Include All Video Tracks in Sequence option. When the sequence is imported into Pro Tools. All of the video tracks will be "flattened" so that the imported sequence shows only a single video stream.



Export Settings–Export To Pro Tools dialog, Video Details tab

6 In the Video Details tab, select one of the following from the Export Method pop-up menu:

Link to (Don't Export) Media The Pro Tools session will link to the same video files as the current Avid sequence. Use this setting if the video files are currently stored on a volume suitable for Pro Tools video playback.

Copy All Media New complete video files will be created on the designated volume.

Consolidate Media Similar to Copy All Media, but only the parts of the video clips which are actually used in the Timeline are copied. Use this setting to copy the video files to a volume suitable for Pro Tools video playback.

Video Mixdown The exported AAF sequence will reference a video mixdown. This setting lets you have a choice of whether to export the video mixdown alone or the video mixdown along with additional video track edits. The choice depends largely on the version of Pro Tools to which you are exporting. Pro Tools 7.2 and higher can show the video mixdown alongside video edits; in this case, you should select both the video mixdown and the video edits. For versions of Pro Tools lower than 7.2, you should export the video mixdown by itself.

The following settings may also appear under the Video Details tab, depending on the selected export method:

Media Destinations Choose where to store copied video files.

Handle Length Extends the beginning and end of the consolidated file by the specified number of frames. This lets you trim edits later, though the sequence would need to be re-edited in the Avid application.

Render Video Effects Always select Render Video Effects. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered manually before exporting the sequence.

Transcode Video To Use this only if you need to change the video resolution. Pro Tools supports most SD resolutions supported by Avid, and even supports mixed resolutions in the Pro Tools Timeline, so in most cases there is no need to spend extra time transcoding the video. However, if you have video of a resolution which is not currently supported by Pro Tools, use this setting to transcode it to a supported resolution.

If your Pro Tools system is running on a slower computer, you may be able to reduce some of the CPU load in Pro Tools by transcoding the video to 1:1 on export. 1:1 video is uncompressed, and consequently it does not need to be decompressed before playing back. However, 1:1 video requires significant amounts of storage space.

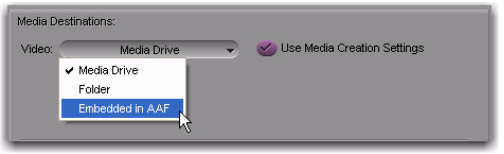
While new video files are typically stored in the OMFI MediaFiles folder (for OMF) or the Avid MediaFiles folder (for MXF), some workflows let you choose a different target destination for video in the Media Destination section of the Video Details tab, as follows:

Media Drive This option exports media to the OMFI MediaFiles folder or Avid MediaFiles folder on a connected storage drive. Select the Use Media Creation Settings option to use the default settings, or deselect that option to choose a media drive from the pop-up menu.

Folder This option exports video media to a specific folder. Select the Use Same Folder as AAF File option to export the video media into the same folder you designated for exporting the AAF sequence, or deselect this option to select a specific folder location for the media.

Embedded in AAF This option embeds the video media in the AAF sequence that is exported from the Avid application.

⚠ *Pro Tools cannot play video that is embedded in an AAF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*



Media Destination section of the Video Details tab

7 Click the Audio Details tab, and select one of the following from the Export Method pop-up menu:

Link to (Don't Export) Media The Pro Tools session will link to the same audio files as the current Avid sequence. Use this setting if the audio files are currently stored on a volume suitable for Pro Tools audio playback.

Copy Media New complete audio files will be created on the designated volume.

Consolidate Media Similar to Copy All Media, but only the parts of the audio which are actually used in the Timeline are copied. Use this setting to copy the audio files to a volume suitable for Pro Tools audio playback.

The following settings may also appear under the Audio Details tab, depending on the selected export method:

Render All Audio Effects Select the Render All Audio Effects option so that all audio effects are rendered before export. If you already manually rendered effects, selecting this option will not create new files. It is highly recommended that all effects be rendered before exporting the sequence.

Include Rendered Audio Effects Select the Include Rendered Audio Effects option. Otherwise, the exported sequence will include the original audio files without any AudioSuite effects from the original sequence—even if those effects were previously rendered.

Convert Audio Sample Rate/Bit Depth/File Format Select Project for any of these, and the current Audio Project Setting will be used.

While new audio files are typically stored in the OMFI MediaFiles folder (for OMF) or the Avid MediaFiles folder (for MXF), some workflows let you choose a different target destination for audio in the Media Destination section of the Audio Details tab, as follows:

Media Drive This option exports audio media to the OMFI or Avid MediaFiles folder on connected storage. Select the Use Media Creation Settings option to use the default settings, or deselect that option to choose a media drive from the pop-up menu.

Folder This option exports audio media to a specific folder. Select the Use Same Folder as AAF File option to export the media into the same folder you designated for exporting the AAF sequence, or deselect this option to select a specific folder location for the media.

Embedded in AAF This option embeds the audio media in the AAF sequence that is exported from the Avid application. Unlike embedded video, Pro Tools can import and play audio which is embedded in an AAF sequence. Embedding audio within the AAF sequence makes file management much simpler because there is only one file to move—the sequence. There is a limit of 2 GB for embedded AAF.

⚠ *Pro Tools cannot play video that is embedded in an AAF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*

8 Click Save or Save As in the Export Settings dialog:

- Click Save to use the specified settings whenever Export to Pro Tools is selected from the Export Settings menu. These settings will also be used when choosing any of the options located at File > Send To > Pro Tools to Unity.
- Click Save As to save these settings as a preset with a different name. These settings can then be recalled in the Export dialog. If you click Save As instead of Save, the Export to Pro Tools settings will not be changed.

9 Click Save in the Export As dialog. (The Export Settings cannot be saved until you have selected a target drive for both audio and video.)

When the export is complete, you are ready to import the file into Pro Tools.

For more information on opening and importing AAF sequences in Pro Tools, see "Importing Audio and Video into Pro Tools" on page 36. For more information on the Import Session dialog, see the Pro Tools Reference Guide.

To export only part of a sequence:

1 Choose Clip > New Sequence to create a new sequence.

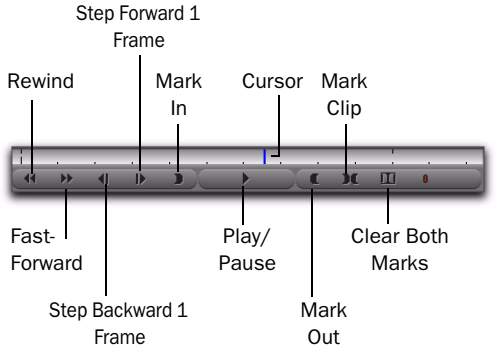
2 In the bin, name the sequence and drag it to the Record Monitor.

Avid Media Composer main window

3 Drag your original sequence to the Source Monitor.

4 Use the controls underneath the Source Monitor to locate the first frame of the portion of the clip that you want to edit into the sequence:

- To begin playing the clip, click Play (or press the Spacebar). Click Play or press the Spacebar again to Pause.
- To move to the beginning of the clip, click Rewind (or press the Home key).
- To move to the end of the clip, click Fast-Forward (or press the End key).
- To nudge by frame, click Step Forward 1 Frame or Step Backward 1 Frame (or press the Left/Right Arrow keys).
- To scrub, click and drag the cursor beneath the Source Monitor. (Enable the Caps Lock to hear audio while scrubbing.)



Source Monitor controls

5 Click Mark In to mark the *In point* (the first frame of the selected portion of the clip) at the current position of the cursor.

6 Using the same controls, locate the last frame of the portion of the clip that you want to edit into the sequence.

7 Click Mark Out to mark the *Out point* (the last frame of the selected portion of the clip) at the current position of the cursor.

You can also select the entire clip by clicking Mark Clip.

8 Click the Record Monitor to select the empty sequence, then press the Home key to move the cursor to the beginning of the sequence.

9 Click the Overwrite or Splice-In button. The selected portion of old sequence is edited into the empty sequence in the Record Monitor.

Overwrite and Splice-In buttons

10 Follow the preceding steps for exporting the new sequence (see "Manually Exporting an AAF Sequence from Media Composer" on page 29).

Checking In a Sequence to Interplay for Pro Tools

This section describes how to use an Avid editing application to check in a sequence to Interplay for Pro Tools. The following instructions apply to Media Composer 3.5.4 or higher.

To check in a sequence to Interplay for Pro Tools:

1 Navigate to the bin containing the sequence you want to export.

Bin containing the sequence to export

2 Do one of the following:

- Select the sequence, and choose File > Check In to Interplay for Pro Tools.

– or –

- Right-click the sequence, and choose Check In to Interplay for Pro Tools.

3 If you have previously set the Editor Export Settings for Pro Tools for the folder, the Pro Tools Video Options dialog appears.

Pro Tools Video Options dialog

See the Pro Tools Avid Interplay Guide for detailed information.

4 Select one of the following options:

Link to existing video media When this option is selected, video is never transcoded or copied, rather the original video media is always used. This option is useful for Video Satellite users who wish to import a satellite track (cuts only). Note that if you select this option in a 720p or 1080 project, the video media will be unplayable in Pro Tools (although it will be playable on the Video Satellite system.)

If the Render video effects box is checked, all video effects will be rendered.

Effects rendered to the C drive will not be offline on the Pro Tools system. Make sure to configure the Media Creation settings so that effects are rendered to a Unity volume accessible to the Pro Tools user(s).

Transcode video Transcodes the video to the resolution specified in the Pro Tools Export Settings and renders all effects. This option is grayed out when the project format is set to 720p or 1080. If the media has already been transcoded, then it won't be transcoded again. If only some files require transcoding, only those files will be transcoded.

New video mixdown Exports a video mixdown using the video transcode resolution in the Editor Export Settings or the Pro Tools Export Settings dialog. This option is identical to the previous "New video mixdown" option. The option is grayed out if the Project Format is 720p or 1080.

5 Click OK to check in the sequence to Interplay for Pro Tools.

Audio Handles

In Media Composer 3.5.4 or higher, when a sequence is checked in for Pro Tools, two-second handles are added to all of the audio clips. If underlying audio is available, the starts and ends of the clips can then be trimmed out by up to two seconds, using the Trim tool in Pro Tools.

After Checking In a Sequence to Interplay for Pro Tools

The system exports the sequence from the Avid application, and then checks in the sequence to Interplay.

If the Interplay folder containing the exported sequence has been configured with video and audio settings defined in the Editor Export Settings for Pro Tools plug-in, those settings are applied to the sequence. (These settings can apply to either the entire database or to one or more folders, depending on how they are configured.)

When you use an Avid application to check in a sequence to Interplay for Pro Tools, the system chooses a destination folder in the Interplay database based on the current Interplay view settings, with the default destination folder as follows:

Projects*project_name**bin_name*

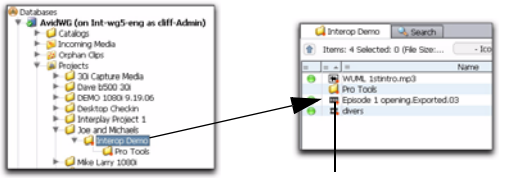
If your check-in destination folder is a folder for which settings have not been defined, the system displays the Pro Tools Export Settings dialog so you can specify the settings.

Pro Tools Export Settings dialog

Exported Files in Interplay

If this is the first time the you have checked in a sequence to Interplay for Pro Tools for this project, the system performs the following operations:

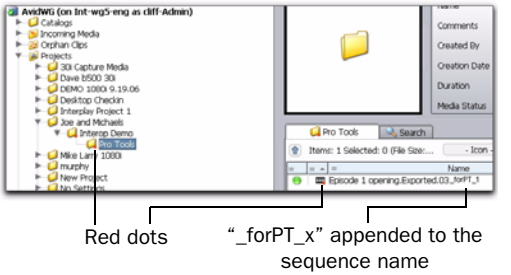
- Checks in the Avid sequence to the *bin_name* folder.
- Creates a Pro Tools folder within the *bin_name* folder.
- Checks in the files for the Pro Tools editor to the Pro Tools folder.
- Checks in a Pro Tools sequence to the Pro Tools folder.



Location of the Avid sequence and its associated Pro Tools folder

The first time the sequence is exported, the system appends the text "_forPT_1" to the sequence name in the Pro Tools folder. Each subsequent time the sequence is exported, it uses the text "_forPT_2," "_forPT_3," and so on.

The following illustration shows the contents of the Pro Tools folder after the first export.



Contents of Pro Tools folder (left pane) and sequence listed in that directory (right pane)

The red dots in the illustration indicate that the system has placed a reservation on the files to prevent unauthorized deletion for a fixed period of time. For more information, see the Avid Interplay Access User's Guide.

Importing Audio and Video into Pro Tools

To import sequences exported from Avid applications into Pro Tools, you can choose from the following methods:

- Importing an AAF or OMF sequence as a Pro Tools session
- Importing an AAF or OMF sequence into an existing Pro Tools session
- Importing a video mixdown into Pro Tools
- Importing an AAF sequence into Pro Tools from Interplay (Pro Tools Avid Interplay Option and an Avid Interplay system required)

Importing an AAF or OMF Sequence as a Pro Tools Session

The easiest way of using Pro Tools to edit a sequence exported from an Avid application is to open it as a new session.

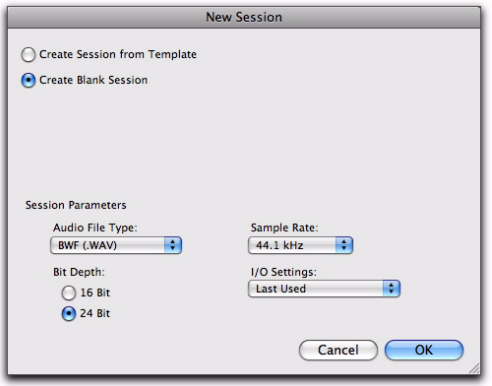
To open an AAF (or OMF) sequence as a Pro Tools session:

1 Launch Pro Tools.

2 Choose File > Open Session.

3 In the Open Session dialog, navigate to the AAF or OMF sequence you want to import.

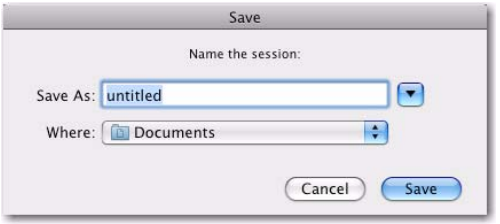
4 Click Open.



Pro Tools New Session dialog

5 Select the I/O Settings to use for the session. Several pre-configured I/O Settings are included with your system, or you can select a custom I/O Setting that you have created.

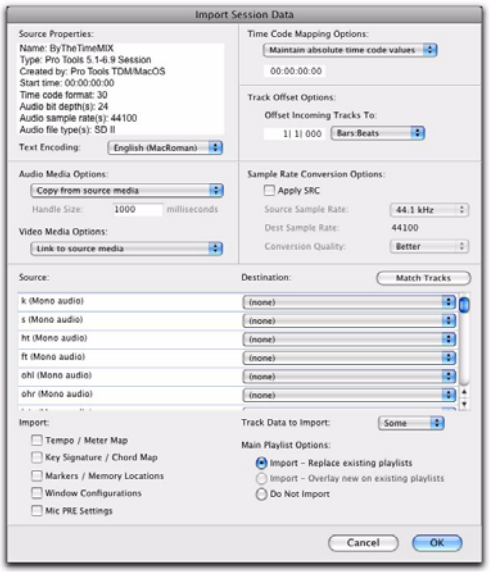
6 Click OK.



Pro Tools Session Naming dialog

7 Name the session and click Save.

The Import Session Data dialog appears.



Import Session Data dialog

Pro Tools lets you open and import OMF or AAF sequences that reference audio files with mixed sample rates and/or bit depths. Audio files will be converted to the highest sample rate and bit depth of the files being imported (for new sessions) or to the current sample rate and/or bit depth (for existing sessions).

8 From the Audio Media Options pop-up menu, choose how you want to import audio files into Pro Tools:

- If the audio files reside on a volume from which Pro Tools can play back audio, select Link to Source Media (Where Possible).
- If the audio files reside on a volume from which Pro Tools cannot play back audio, select Copy from Source Media to copy all audio to the Pro Tools audio storage or Consolidate from Source Media to copy only the portions of the audio used in the Pro Tools Timeline to the Pro Tools audio storage.

9 From the Video Media Options pop-up menu, choose how you want to import video files into Pro Tools:

- If the video files reside on a volume from which Pro Tools can play back video, select Link to Source Media.
- If the video files reside on a volume from which Pro Tools cannot play back video, select Copy from Source Media to copy all video to the Pro Tools video storage.

10 Change other parameters as desired. For more information, see "Exporting Audio from Pro Tools for Avid Editing Applications" on page 42.

11 Click OK.

Pro Tools will create a new Audio Files folder, a Fade Files folder, a Video Files folder, a cache.wfm file, and a session file at the designated locations. This session will match the audio file type, sample rate, and bit depth of the audio in the OMF or AAF you selected.

Importing an AAF or OMF Sequence into an Existing Session

You can import an AAF or OMF sequence containing audio and video media into an existing Pro Tools session.

⚠ *Any video imported into Pro Tools must be the same frame rate as video already placed in the Timeline.*

To open and import audio and/or video tracks from an OMF or AAF sequence:

1 Open an existing Pro Tools session.

2 Choose File > Import > Session Data, and choose the AAF or OMF sequence that you wish to import.

⚠ *Pro Tools cannot play video that is embedded in an AAF or OMF sequence, but it can read the video editing metadata when imported into a satellite track. Do not use this option if you want to import the video itself into Pro Tools.*

💡 *You can also open an AAF or OMF sequence by dragging it from any location on your computer or the DigiBase browser to the Pro Tools Timeline.*

3 From the Audio Media Options pop-up menu, choose how you want to import audio files into Pro Tools:

- If the audio files reside on a volume from which Pro Tools can play back audio, select Link to Source Media (Where Possible).
- If the audio files reside on a volume from which Pro Tools cannot play back audio, select Copy from Source Media to copy all audio to the Pro Tools audio storage or Consolidate from Source Media to copy only the audio used in the session to the Pro Tools audio storage.

4 From the Video Media Options pop-up menu, choose how you want to import video files into Pro Tools:

- If the video files reside on a volume from which Pro Tools can play back video, select Link to Source Media.
- If the video files reside on a volume from which Pro Tools cannot play back video, select Copy from Source Media to copy all video to the Pro Tools video storage.

5 In the Import Session Data dialog, deselect any source tracks that you do *not* want to be imported. (If you are importing Session Data from AAF or OMF sequences, all tracks are selected by default. If you are importing tracks from a Pro Tools session, no tracks are selected by default.)

6 Click OK.

⚠ *If there are any errors or region name truncations, a dialog will appear asking you if you want a detailed report of the changes. Click Yes and choose where you want to save the log.*

7 If your audio or video source media is on a volume that is not suitable for playback (shown as a Transfer volume in the Workspace browser) or if your MediaNetwork workspace privileges are read-only, Pro Tools displays a dialog that guides you to copy the media to a volume designated for Playback or Record. (Click Yes.)

Pro Tools imports the audio and video media to the Timeline. Audio tracks with mixed sample rates and/or bit depth are automatically converted to the same sample rate and bit depth as the session.

Now you are ready to edit the audio files in Pro Tools.

Drive Selection When Importing Session Data

When using the Import Session Data dialog to import audio files with Copy or Consolidate Source selected in the Audio Media Options pop-up menu, all new audio files are stored on the volumes designated for their respective target tracks in the Disk Allocation dialog.

Selecting a Unity Workspace When Importing Session Data

When using the Import Session Data dialog to import audio files with Copy or Consolidate Source selected in the Audio Media Options pop-up menu, all new audio files are stored on the volumes designated for their respective target tracks in the Disk Allocation dialog.

When importing video files (such as from a CD), the video files are copied by default to the same volume that holds the session file. To have the files copied to another volume, open the Workspace browser, and select T in the volume designation column for all volumes except the volume where you want the video to be stored. To ensure that the files are not copied to the root

level of the volume, create a folder with the session name on the desired Unity workspace, then create a folder within that session folder named Video Files.

Importing a Sequence into Pro Tools from Interplay

(Avid Interplay System Only)

This section describes how to locate a sequence on the Interplay database and import it into Pro Tools. This section assumes that you have already configured the Pro Tools Import settings in the Interplay Administration tool.

For more information on setting Pro Tools import settings, see the Pro Tools Avid Interplay Guide.

If you do not establish Pro Tools Import Settings before importing the sequence into Pro Tools, you can select the appropriate values in the Import Session Data dialog during the import process.

When importing a sequence from Interplay into Pro Tools, you can import into a new or existing session.

For more detailed information on using the Avid Interplay Access browser, see the Avid Interplay Access User's Guide.

Importing a Sequence into Pro Tools from within Interplay

To check out the sequence and import it into Pro Tools from within Avid Interplay Access:

1 Start Avid Interplay Access.

2 Navigate to the Pro Tools folder containing the sequence you want to import.

3 Right-click the sequence, and choose Import to Digidesign Pro Tools.

If Pro Tools is not already running, it automatically launches.

Importing a Sequence from Interplay from within Pro Tools

This section describes to how to use Pro Tools to import a sequence from Interplay. If you have not yet opened Interplay Access and specified a server to connect to, you must do that before performing this procedure.

To check out the sequence and import it into Pro Tools from within Pro Tools:

1 Start Pro Tools.

2 If you want to import the sequence into an existing session, open that session.

3 Choose File > Import > Sequence from Avid Interplay. The Interplay Access window appears.

4 In the Interplay Access window, expand the Interplay database by clicking the plus sign (+) next to it.

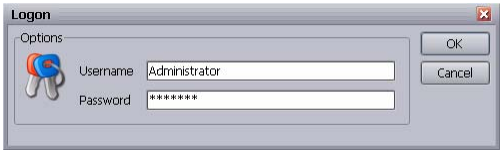
5 Expand the root folder of the database—usually titled *AvidWG* or a variation thereof—by clicking the plus sign (+) next to its name.

6 Expand the Projects folder.

7 Expand the project containing the sequence you want to check out and import to Pro Tools.

The Logon to Interplay dialog appears.

8 Enter your username and password, and click OK.



Logon to Interplay dialog

9 In the Interplay Access window, locate and select the sequence that you want to import.

Files that appear in greyed out text out are not available for import into Pro Tools.

Interplay Access window

10 Click OK.

11 If the Name the Session dialog appears, navigate to the appropriate location either on local storage or on a dedicated workspace on the network, and click Save.

This dialog does not appear if you are importing a sequence into an existing session.

12 If the Pro Tools Import Session Data dialog appears, select the appropriate options and click OK.

This dialog does not appear if you configured the Pro Tools Import Settings in the Avid Interplay Administrator. Pro Tools automatically uses those settings to import the sequence. (See the Pro Tools Avid Interplay guide for detailed information on configuring Pro Tools Import Settings, and the Pro Tools Reference Guide for detailed information on setting options in this dialog.)

Pro Tools imports the sequence, copies any media (if the settings require copying), and displays the imported sequence within the Pro Tools session.

If the sequence was linked to media files on unmounted volumes, the system provides a warning and asks you to mount those volumes before you proceed with copying or linking to media.

Editing Audio in Pro Tools

Audio files created in the Avid application are either OMF or MXF files, which Pro Tools cannot edit destructively.

When you use Pro Tools to perform a destructive edit (such as using AudioSuite processing to replace the original sound), it creates a new copy of the file and leaves the original untouched.

See the Pro Tools Reference Guide for detailed information on editing audio files in Pro Tools.

Exporting Audio from Pro Tools for Avid Editing Applications

In Pro Tools, you can export audio tracks for use in the Avid application using any of the following commands:

- Exporting selected tracks as an AAF or OMF
- Bouncing to disk
- Exporting selected regions as files
- Exporting edited audio tracks to Interplay from Pro Tools (Avid Interplay system required)

For other export methods, see the *Pro Tools Reference Guide*.

Exporting Tracks as OMF/AAF Sequences

Use Export Selected Tracks as OMF/AAF to export individual tracks or an entire Pro Tools session in AAF or OMF format.

Tracks are exported in their entirety and time selections are ignored.

Volume and pan automation is not retained on export if Quantize Edits to Frame Boundaries is enabled (Avid Compatibility Mode).

The Movie track cannot be exported to AAF or OMF from Pro Tools.

To export selected audio tracks from Pro Tools as an AAF (or OMF) sequence:

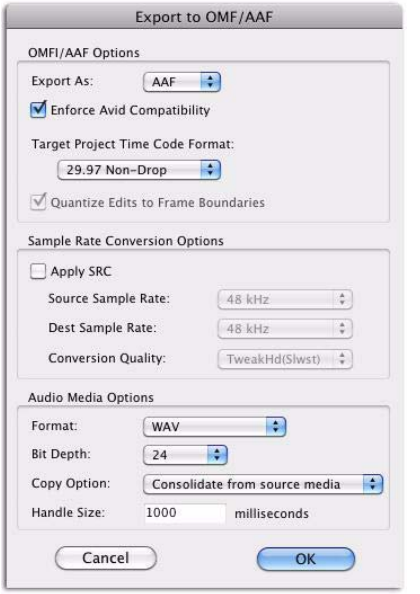
1 In Pro Tools, select the tracks you want to export in the Pro Tools session by Shift-clicking the names of each track.

2 Choose File > Export > Selected Tracks as OMF/AAF.

3 Under OMF/AAF Options, choose AAF (or OMF) from the Export As pop-up menu.

4 Select Enforce Avid Compatibility.

Enforce Avid Compatibility creates frame-accurate edits, wraps the files as OMFI (unless you choose MXF), and limits the sample rate options to 44.1 or 48 kHz. Dithering without noise shaping will be applied to files being exported from 24-bit to 16-bit.



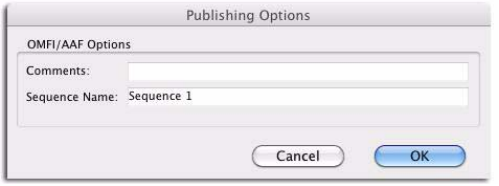
Pro Tools Export to OMF/AAF dialog

An OMF sequence cannot reference MXF media files. In the Export Selected Tracks as OMF/AAF dialog, MXF is only available when AAF is selected in the Export As pop-up menu

5 Ensure that the Target Project Time Code Format pop-up menu displays the correct frame rate for the Avid project.

6 Click OK.

7 In the Publishing Options dialog, type the Pro Tools Comment and Sequence Name.



Pro Tools Publishing Options dialog

8 Click OK.

Pro Tools will create a sequence with the name you supply. (The Pro Tools comment appears in the Avid bin in a Pro Tools Comment column.)

9 In the Name the AAF/OMF File to Export dialog, navigate to a folder where you can easily locate the Pro Tools composition when it is time to import it into the Avid application.

Do not save the sequence to the OMFI Media Files folder or the Avid Media Files folder.

10 Click Save.

11 In the Please Choose a Folder for Converted Audio Files dialog, do one of the following:

- If you are exporting to the same storage that Avid application will be accessing, navigate to the OMFI MediaFiles folder (AIFF or WAV files) or the Avid MediaFiles folder (MXF files).

– or –

- If you are exporting to a location that is not directly accessible to the Avid application, navigate to a location where you can easily find the audio files when you need to copy them over to the Avid computer.

12 Click Use Current Folder (Windows) or Choose (Macintosh).

Pro Tools exports the following files:

- The AAF or OMF sequence is saved to the folder you designated.
- If you exported audio files directly to the Avid application video storage, related media is saved to the appropriate volume and folder (OMFI MediaFiles or Avid MediaFiles) accessible to the Avid application.

13 Do one of the following:

- If you are using the Avid application on the same computer as Pro Tools and are ready to use it to import the files you just exported from the Avid application, exit Pro Tools.

– or –

- If you were unable to save the audio portion of the AAF sequence directly to storage that is accessible from the Avid application, copy the audio files from their saved location to the OMFI MediaFiles folder (for AIFF or WAV media) or Avid MediaFiles folder (for MXF media) on a drive connected to your Avid system.

Exporting Audio Files Using Bounce to Disk

Use the Bounce to Disk command to create premixed files of the current Pro Tools session. This does not export all of the individual files on the Timeline, but it does guarantee that the mix you hear in the Avid application will be identical to the mix you hear in Pro Tools, including all panning, effects and automation.

To export audio files using Bounce to Disk:

1 In Pro Tools, finalize the mix.

2 Select the time range of the session that you want to export. (All audible tracks in that time range will be included in the bounce, whether they are selected or not.)

3 Choose File > Bounce to > Disk.

4 Select the Enforce Avid Compatibility option.

Enforce Avid Compatibility creates frame-accurate edits, wraps the files as OMFI (unless you choose MXF), and limits the sample rate options to 44.1 or 48 kHz. Dithering without noise shaping will be applied to files being bounced from 24-bit to 16-bit.

5 Choose a file type from the File Type pop-up menu.

6 Click Bounce.

7 In the Publishing Options dialog, type the Pro Tools Comment and Clip Name.

If you selected more than one region for export, the Clip Name field will not be available and the names of the regions will be used for the exported files.

8 Choose the Target Project Time Code Format.

9 Click OK.

10 In the Save Bounce As dialog, navigate to the volume you will use for audio playback in the Avid application.

- For MXF audio files, ensure the file is saved to the Avid MediaFiles folder.
- For all other audio files, ensure the file is saved to the OMFI MediaFiles folder.

11 Click Save.

All audible audio in the selection will be exported to two multi-mono audio files.

Exporting Edited Audio Tracks to Interplay from Pro Tools

After you edit the audio material from the sequence, you can export the audio tracks back into the sequence in Interplay.

⚠ *It is recommended that you provide completed audio stems rather than audio tracks with edits.*

To export audio tracks from Pro Tools, and then check in audio tracks to Interplay:

1 In Pro Tools, select the tracks that you want to export into the Pro Tools sequence on Interplay.

2 Select File > Export > Selected Tracks to Sequence in Avid Interplay.

3 In the Export Comment dialog, type a comment and click OK.

4 In the Replace or Add Selected Tracks dialog, select a method for laying back edited audio material into the Pro Tools sequence residing on the Interplay server:

Replace with Selected Tracks Replaces the old audio tracks in the Pro Tools sequence with the edited audio tracks. Select this option if you do not want to preserve the original audio in the sequence.

Add Selected Tracks Adds the edited audio tracks to the Pro Tools sequence on the Interplay database. Select this option if you want to preserve the original audio in the sequence.

⚠ *When adding selected tracks, ensure that the total number of tracks in the sequence residing on the Interplay server does not exceed the total allowed number of tracks for an Avid application—24 audio and 24 video tracks.*

5 Click OK. A confirmation message box appears.

6 Click OK.

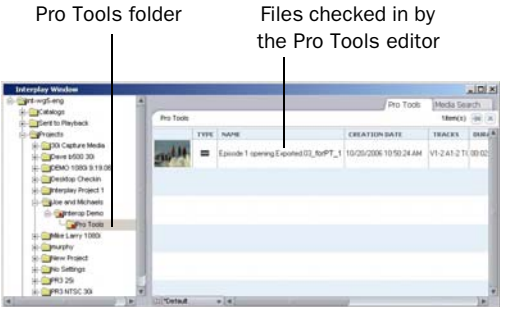
The sequence in the Avid Interplay database is now ready to be checked out and imported by the Avid application.

Importing Pro Tools Audio Files Back into the Avid Editing Application

After you have checked out the completed audio stems to the Pro Tools sequence on the Interplay server, you must import the sequence back into the Avid application.

To import the sequence back into the Avid editing application:

1 In the Avid application, open the Interplay Window and navigate to the location of the checked in Pro Tools sequence.

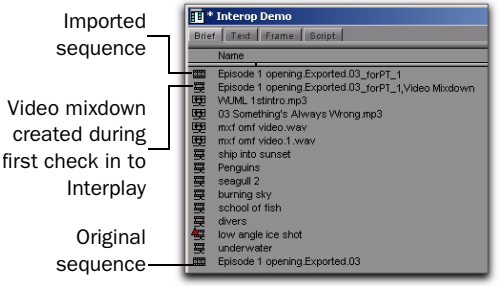


Interplay browser

Depending on edits made in Pro Tools, you might see several audio files with names containing the prefix "Sample accurate edit." For more information, see "Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing" on page 47.

2 Drag the sequence into the bin.

The Avid application checks out the sequence and imports it and its related files into the bin.



Bin after import

3 You can now do one of the following:

- Add the new audio tracks into the original sequence.

– or –

- Work with the imported sequence.

In this example, the Pro Tools audio tracks are added into the original sequence.

If you plan to check in the sequence to Interplay for Pro Tools again, it is simpler to import the audio into the original sequence. Every time you export a sequence for Pro Tools, the system appends the text "_forPT_x," where x is the number of times the sequence has been exported. It can become confusing if several similar text strings are appended to the name.

4 Load the imported sequence into the Source monitor.

5 Add the audio into the original sequence using standard editing techniques.

For more information, see the documentation (PDF or Help file) for your Avid editing application.

The following illustration shows the audio tracks cut into the original sequence. In this example, the original tracks are overwritten.

Sequence in the Avid Timeline after overwrite

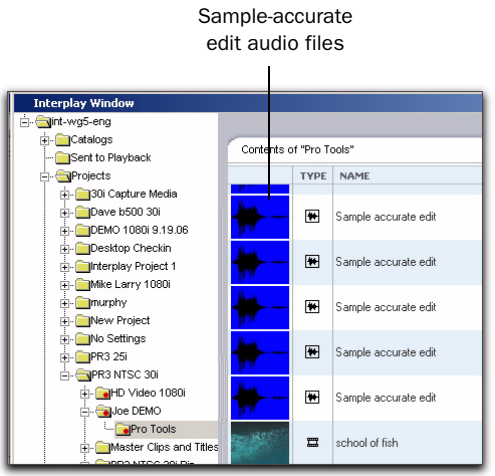
6 Now you can use the Avid application to make any adjustments to the sequence and do the following:

- Create a digital cut.
- Perform a Send to Playout operation.
- Check in the sequence to Interplay for Pro Tools if the Pro Tools editor needs to work on the sequence again.

Frame-Rate Accurate Video Editing and Sample-Rate Accurate Audio Editing

After a sequence has been exported back to Interplay from Pro Tools, a number of additional media files appear in the Interplay Window and in the bin. Some have names containing the prefix *Sample accurate edit*. These are the additional media files that Pro Tools creates to make sure that the Avid application receives frame-accurate audio. Sample-accurate edit media files are visible if you zoom in on portions of the imported audio in the Timeline.

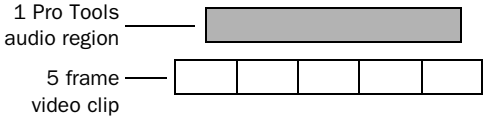
The following illustration shows Sample accurate edit files in the Interplay Window.



Sample-accurate edits in the Interplay window

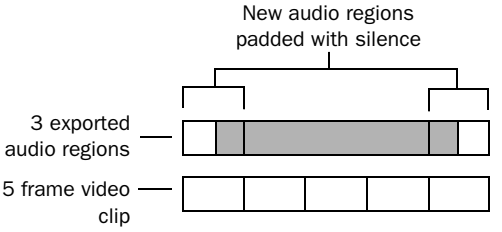
Avid video editing applications edit with frame accuracy. This means that when using an Avid application to work on a 30-fps project, you can edit at 30 different locations for every one second of video. Pro Tools edits with sample rate accuracy. In a 48 kHz session, there are potentially 48,000 locations to edit for every second of audio.

When Pro Tools exports a sequence, it must ensure that the audio media files line up on frame boundaries. To do this, it might have to split an existing audio region into three regions. For example, the following illustration shows a 5-frame video clip and a corresponding audio region. In Pro Tools, the audio regions might not line up on video frame boundaries.



The original audio clip does not line up on video frame boundaries

In order to export frame accurate audio regions, Pro Tools splits the audio media on frame boundaries and fills any gaps with silence. The following illustration shows the resulting audio regions that are exported to the Avid application.



Exported audio regions line up on video frame boundaries

To cut down on the number of sample accurate edit files, the Pro Tools editor can perform a Bounce to disk for each track (or a bus-record to an audio track) rather than exporting tracks that contain all of the audio edits.

Synchronizing Audio with an Avid Sequence

Once you have imported an audio file or sequence from Pro Tools into a bin in the Avid application, you can synchronize it with video. This is especially useful for verifying sync with the original video sequence, then laying audio and video back to tape or creating a digital movie with your final mix.

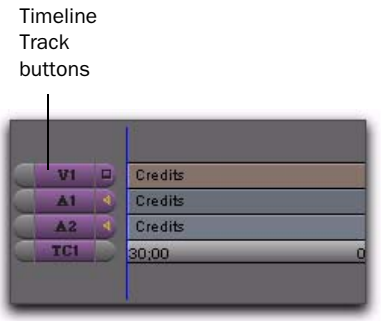
To synchronize an edited audio file or sequence with the original video sequence:

1 Ensure that the audio exported from Pro Tools is now residing in a bin within your current project.

2 Drag the original sequence to the Record Monitor to see all elements in the Timeline.

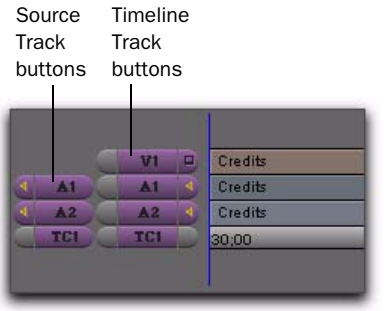
Record and Source Monitors

The original sequence displays in the Timeline.



Original sequence displays in Timeline

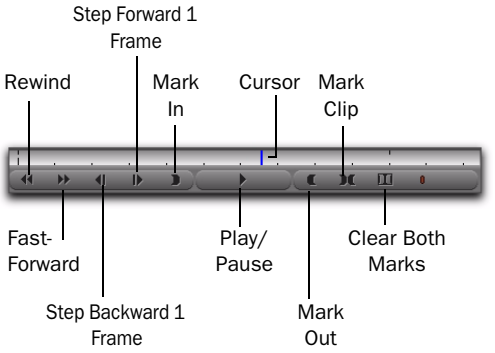
3 Drag the imported audio clip or sequence from the bin to the Source Monitor. New Source Track buttons for the source appear to the left of the Track buttons for the Timeline.



New track buttons

4 Use the controls underneath the Source Monitor to locate the first frame of the portion of the clip that you want to edit into the sequence:

- To begin playing the clip, click Play (or press the Spacebar). Click Play or press the Spacebar again to Pause.
- To move to the beginning of the clip, click Rewind (or press the Home key).
- To move to the end of the clip, click Fast-Forward (or press the End key).
- To nudge by frame, click Step Forward 1 Frame or Step Backward 1 Frame (or press the Left/Right Arrow keys).
- To scrub, click and drag the cursor beneath the Source Monitor. (Enable the Caps Lock to hear audio while scrubbing.)



Source Monitor controls

Enable the Caps Lock to hear audio while scrubbing.

5 Click Mark In to mark the *In point* (the first frame of the selected portion) at the current position of the cursor.

6 Using the same controls, locate the last frame of the portion of the source that you want to edit into the sequence.

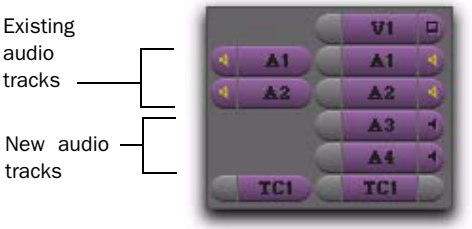
7 Click Mark Out to mark the *Out point* (the last frame of the selected portion) at the current position of the cursor.

You can also select the entire source clip or sequence by clicking Mark Clip.

The portion of the audio source between the In point and the Out point is now selected for editing into the sequence.

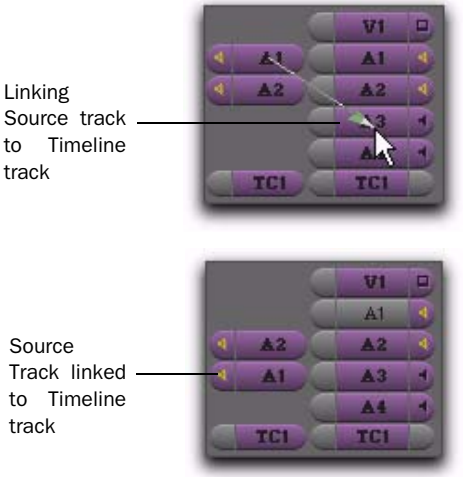
You can also click the Clear Both Marks button to clear the In and Out points.

8 Choose Clip > New Audio Track to add audio tracks to the sequence. (This leaves any original audio tracks in place to compare synchronization.) Add a new track for each channel of audio you want to add.



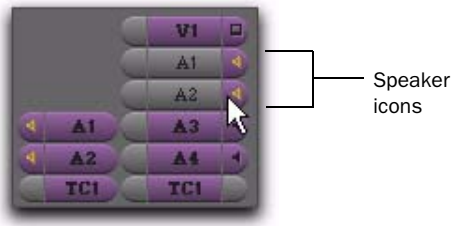
Audio tracks in the Timeline

9 If necessary, click on the Source track buttons and drag to the desired new Timeline track buttons so that the new media will be placed on the correct tracks in the Timeline.



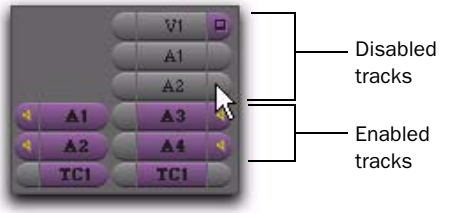
Aligning Source audio tracks with Timeline audio tracks

10 If the original audio tracks still display yellow speaker icons, click the speaker icons in the Track Enable button to mute them. The speaker icons for the original tracks will disappear, and the speaker icons should appear yellow in the new tracks, indicating that they will be heard.



Clicking the speaker icons to disable Source tracks

11 If the video track and the original audio tracks are enabled (gray), disable them and enable the new audio tracks (purple), by clicking the correct audio track buttons (A1–A24). This will ensure that only the new tracks will be affected by any editing commands.

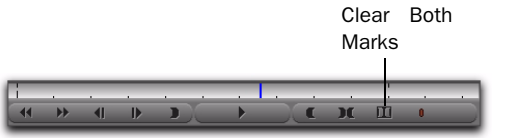


New audio tracks in Timeline

12 In the Timeline, place the cursor at the position where you want to lay the new audio into the Timeline. (Press Home to move to the beginning of the sequence.)

Timeline containing two empty audio tracks

13 Under the Record Monitor, click the Clear Both Marks button to remove any In and Out points (if present).



Record Monitor controls

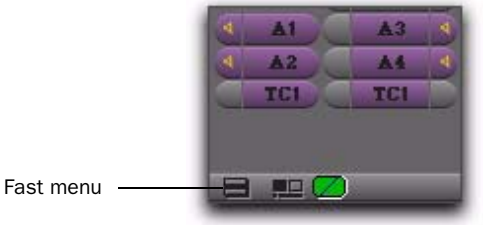
14 Click the Overwrite button to lay the audio into the Timeline.

Overwrite and Splice-In buttons

The audio selected between the In and Out points in the Source Monitor is laid into the Timeline at the position of the cursor.

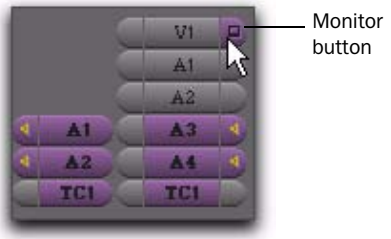
Timeline with new audio sequence

15 If you want to display audio waveforms in the Timeline, click the Fast Menu (located on the lower left hand corner of the Timeline), and choose Audio Data > Energy Plot. Ensure that the new audio tracks appear synchronized with the originals.



Fast menu

16 If necessary, make sure the video track's Monitor button is enabled (purple). This will allow you to view the video portion of the sequence in the Record Monitor (or client monitor).



Enabling the Video track

17 Press the Home key to move the cursor to the beginning of the sequence and press the Spacebar to play the sequence. The new audio should be synchronized with the video.

After verifying the new audio sequence is correctly synchronized, you can do either of the following:

- Lay audio and video back to tape using Digital Cut.

– or –

- Export your sequence as a QuickTime, MPEG, or other format digital movie.

appendix a

Slot Configurations for Avid Video Peripherals

This appendix covers slot configurations for Pro Tools HD Native systems with Avid video peripherals on Mac and Windows. These slot configurations have been qualified and recommended by Avid.

For the most up-to-date compatibility information, visit www.avid.com.

Summary of Recommended Windows Slot Configurations

This section summarizes qualified and recommended PCI and PCIe slot configurations for the following Windows machines with or without expansion chassis, for both local and shared storage:

- HP Z400 (HD Native only)
- HP Z800
- HP xw8600

HP Z400

HP Z400 with host cards (shared storage)

- ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork

See "Slot Configuration for HP Z400 with Host Cards" on page 55.

HP Z800

HP Z800 with host cards (shared storage)

- ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork

See "Slot Configuration for HP Z800 with Host Cards" on page 56.

HP Z800 with expansion chassis (shared storage)

- Magma or Digidesign EB7 Chassis with PCIe host card, using ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork
- Magma PE6R4 Chassis with PCIe host card, using ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork

See "Configurations for HP Z800 with Expansion Chassis" on page 57.

HP xw8600

HP xw8600 with host cards (shared storage)

- ATTO Celerity FC-41RL/FC-41ES PCIe host card to 4-GB Unity MediaNetwork

See "Slot Configuration for HP xw8600" on page 59.

Summary of Mac Slot Configurations

This section summarizes qualified and recommended slot configurations for the following Mac machines for local storage with or without expansion chassis:

- Apple Mac Pro

Apple Mac Pro

- Apple Mac Pro with host cards
- Apple Mac Pro with Magma PE6R4

See "Apple Mac Pro" on page 60.

HP Z400 Slot Configurations

This section describes qualified and recommended slot configurations for HP Z400, configured with a Pro Tools HD Native card.

Slot Configuration for HP Z400 with Host Cards

HP Z400: ATTO Celerity FC-41ES PCIe Host Card to 4 GB Unity MediaNetwork

Slot	Card
CPU Slot 1 (PCIe x8 mechanical, x4 electrical)	1394b PCI-Express HBA (w 8K buffers) required for Mojo or Mojo-SDI, such as a StarTech PEX1394B3
CPU Slot 2 (PCIe x16 - graphics)	NVIDIA Quadro FX 1800
CPU Slot 3 (PCIe x8 mechanical, x4 electrical)	ATTO FC-41ES PCIe (For MediaNetwork connection)
CPU Slot 4 (PCIe x16 mechanical, x8 electrical)	Pro Tools|HD Native Card
CPU Slot 6 (PCI 32-bit 33 Mhz)	
CPU Slot 6 (PCI 32-bit 33 Mhz)	
Embedded NIC	Broadcom BCM5764 GbE (Requires Broadcom driver 14.2.0.5 for use with Pro Tools)

HP Z800 Slot Configurations

This section describes qualified and recommended slot configurations for HP Z800, in configurations with host-cards-only, and with a qualified expansion chassis.

Slot Configuration for HP Z800 with Host Cards

HP Z800: ATTO Celerity FC-41ES PCIe Host Card to 4 GB Unity MediaNetwork

Slot	Card
CPU Slot 1 (PCIe x8 mechanical, x4 electrical)	1394b PCI-Express HBA (w 8K buffers) required for Mojo or Mojo-SDI — see below for specific requirements
CPU Slot 2 (PCIe x16 - graphics)	NVIDIA Quadro FX 4800 or 1800
CPU Slot 3 (PCIe x8 mechanical, x4 electrical)	HD Accel (HD3) (Slot Not Accessible when using Quadro FX 4800)
CPU Slot 4 (PCIe x16 mechanical, x8 electrical)	HD Accel (HD2)
CPU Slot 5 (PCIe x16 mechanical, x8 electrical)	HD Accel Core (HD1, HD2, HD3) or Pro Tools|HD Native Card
CPU Slot 6 (PCI 32-bit 33 Mhz)	Secondary SAS Port (Embedded)
CPU Slot 7 (PCIe x16 mechanical, x8 electrical)	Shared Storage Controllers: Atto FC-41ES - MediaNet Intel PRO/1000 PT - ISIS Local Storage Controllers: ATTO UL5D

Configurations for HP Z800 with Expansion Chassis

This section describes qualified and recommended slot configurations for HP Z800 systems, with the following expansion chassis:

- Magma or Digidesign EB7 Chassis with PCIe host card, using ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork
- Magma PE6R4 Chassis with PCIe host card, using ATTO Celerity FC-41ES PCIe host card to 4 GB Unity MediaNetwork

HP Z800 with Magma or Digidesign EB7 PCIe Chassis: ATTO Celerity FC-41ES PCIe Host Card to 4 GB Unity MediaNetwork

Slot orders in the chassis run from left (closest to the power supply) to right.

Slot	Card
CPU Slot 1 (PCIe x8 mechanical, x4 electrical)	1394b PCI-Express HBA (w 8K buffers) required for Mojo or Mojo-SDI — see below for specific requirements
CPU Slot 2 (PCIe x16 - graphics)	NVIDIA Quadro FX 4800 or 1800
CPU Slot 3 (PCIe x8 mechanical, x4 electrical)	Empty (Slot Not Accessible when using Quadro FX 4800)
CPU Slot 4 (PCIe x16 mechanical, x8 electrical)	Empty
CPU Slot 5 (PCIe x16 mechanical, x8 electrical)	Magma EB7 Host Adapter
CPU Slot 6 (PCI 32-bit 33 Mhz)	Secondary SAS Port (Embedded)
CPU Slot 7 (PCIe x16 mechanical, x8 electrical)	Shared Storage Controllers: Atto FC-41ES - MediaNet Intel PRO/1000 PT - ISIS Local Storage Controllers: ATTO UL5D
Chassis Slot 1 (closest to power supply)	HD Accel Core card
Chassis Slots 2–7	Optional: HD Accel cards (6 maximum)

HP Z800 with Magma or Digidesign PE6R4 PCIe-PCI-X Chassis: ATTO Celerity FC-41ES PCIe Host Card to 4 GB Unity MediaNetwork

Slot orders in the chassis run from left (closest to the power supply) to right.

Slot	Card
CPU Slot 1 (PCIe x8 mechanical, x4 electrical)	1394b PCI-Express HBA (w 8K buffers) required for Mojo or Mojo-SDI — see below for specific requirements
CPU Slot 2 (PCIe x16 - graphics)	NVIDIA Quadro FX 4800 or 1800
CPU Slot 3 (PCIe x8 mechanical, x4 electrical)	Empty (Slot Not Accessible when using Quadro FX 4800)
CPU Slot 4 (PCIe x16 mechanical, x8 electrical)	Empty
CPU Slot 5 (PCIe x16 mechanical, x8 electrical)	Magma PE64R Host Adapter
CPU Slot 6 (PCI 32-bit 33 Mhz)	Secondary SAS Port (Embedded)
CPU Slot 7 (PCIe x16 mechanical, x8 electrical)	Shared Storage Controllers: Atto FC-41ES - MediaNet Intel PRO/1000 PT - ISIS Local Storage Controllers: ATTO UL5D
Chassis Slot 1 (closest to power supply)	HD Core card (PCI)
Chassis Slots 2–7	Optional: HD Accel or HD Process cards (5 maximum)

Additional Requirements:

1394 Mojo and Mojo-SDI Configuration Requirements (slot #1 requirement)

Avid Mojo and Mojo-SDI must connect via specific add-in 1394b PCI-Express Firewire cards (with 8K buffers) which must be installed in Slot #1. The Z800 embedded 1394 port cannot be used for connectivity to Mojo or Mojo-SDI.

Current qualified PCI-Express 1394b Firewire card:

- StarTech PEX1394B3 (AVID P/N 7030-30029-01)

HP xw8600 Slot Configurations

This section describes qualified and recommended slot configurations for HP xw8600.

Slot Configuration for HP xw8600

HP xw8600: ATTO Celerity FC-41RL/FC-41ES PCIe Host Card to 4 GB Unity MediaNetwork

Slot	Card
CPU Slot 1 (PCI 32-bit 33 Mhz)	Optional: 1394 HBA for FireWire storage ADS PYRO PCI 64R2 (part # API-315, RoHS compliant) or ADS PYRO PCI 64 (part # API-311, discontinued) Do not use a 1394 HBA for storage in slot 1 if an Avid video peripheral or FireWire drive(s) are connected to the host 1394 ports.
CPU Slot 2 (PCIe x16 - graphics)	Required: NVIDIA Quadro FX 370 or NVIDIA Quadro 290
CPU Slot 3 (PCIe x8 mechanical, x4 electrical)	HD Accel Core (HD1, HD2, or HD3) or Pro Tools|HD Native Card
CPU Slot 4 (PCIe x16 mechanical, x8 electrical - via system BIOS)	HD Accel (HD2)
CPU Slot 5 (PCIe x16 mechanical, x8 electrical - via system BIOS)	HD Accel (HD3) or ATTO UL5D PCIe SCSI controller
CPU Slot 6 (PCIe x8 mechanical, x4 electrical))	HD Accel or ATTO Celerity FC-41RL/FC-41ES Fibre adapter for Unity MediaNetwork connectivity or ATTO UL5D PCIe SCSI controller
CPU Slot 7 (PCI-X 64-Bit 133MHz	Option 1: ATTO UL4D PCI-X SCSI controller Option 2: 1394 HBA for FireWire storage — ADS PYRO PCI 64R2 (part # API-315, RoHS compliant) or ADS PYRO PCI 64 (part # API-311, discontinued)

Notes:

Slot 1: This slot shares the same bus as the built-in Texas Instruments 1394 controller. Do not use a 1394 HBA for storage in slot 1 if an Avid video peripheral or FireWire drive(s) are connected to the host 1394 ports.

Slot 7: This slot shares the same bus as the embedded SAS 1068 controller. Installation of any non-specified HBA into this slot (in particular a PCI 32-bit/33MHz HBA) will result in severely degraded performance of the SAS controller. Use only specified HBAs in this slot.

Mac Slot Configurations

This section describes qualified and recommended slot configurations for Apple Mac machines.

Unity MediaNetwork Configurations for Apple Mac Pro

This section describes qualified and recommended PCI and PCIe slot configurations for the following Apple Mac Pro systems:

- Apple Mac Pro (HD Accel or HD Native)
- Apple Mac Pro and Magma PE6R4 chassis with PCIe host card (HD Accel only)

Apple Mac Pro

Slot	Card
CPU Slot 1 (AGP)	Monitor card
CPU Slot 2	ATTO Celerity FC-41ES Fibre adapter for Unity MediaNetwork connectivity
CPU Slot 3	HD Accel Core or Pro Tools|HD Native Card
CPU Slot 4 (133MHz 64-bit)	Optional: HD Accel card, HD Process card, SCSI PCIe card, FireWire PCIe card

Apple Mac Pro and Magma PE6R4 Chassis with PCIe Host Card

Slot	Card
CPU Slot 1 (AGP)	Monitor card
CPU Slot 2	ATTO Celerity FC-41ES Fibre adapter for Unity MediaNetwork connectivity
CPU Slot 3	Magma 6 Slot PE6R4 PCIe card
CPU Slot 4 (133MHz 64-bit)	Optional: SCSI PCIe card or FireWire PCIe card
Chassis Slot 1 (closest to power supply)	HD Core card
Chassis Slots 2–7	Optional: HD Accel or HD Process cards (6 maximum)

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